

Appln. No. 09/997,556

Attorney Docket No. 10541-542

II. Remarks

Claims 1, 3-10, 12-19, and 21 stand rejected. Claims 1, 10, and 19 are being amended. Accordingly, after entering this amendment, claims 1, 3-10, 12-19, and 21 remain pending.

As recited in amended claims 1, 10, and 19, the claimed invention is directed to methods and apparatuses for cooling a grinding system. The grinding system includes a grinding tool with a grinding surface that spins at a predetermined velocity. A nozzle sprays coolant material at substantially the same predetermined velocity.

Spraying the coolant material at the same velocity as that of the grinding tool offers certain advantages. In conventional systems, excess heat is transferred away from the grinding system by a coolant material sprayed at a fixed point without consideration of the velocity of the coolant material relative to the velocity of the grinding surface. As such, a significant amount of coolant is wasted. On the other hand, the methods and apparatuses of the present invention eliminate or minimize coolant wastage by matching the speed of the coolant with that of the grinding surface.

Reconsideration and re-examination of this application in view of the above amendments and the following remarks are respectfully requested.

Claim Rejections – 35 U.S.C. § 112

Claims 1, 3-10, 12-19, and 21 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite on the basis of the terms "shaped and sized."

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In response, claims 1, 10, and 19 have been amended with the terms "shaped and sized" deleted from the claims.

Accordingly, the rejections under 35 U.S.C. § 112 are now moot, and withdrawal of the rejections is respectfully requested.

Claim Rejections – 35 U.S.C. § 103

Claims 1, 3-10, 12-19, and 21 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,454,636 to Iwabuchi.

Iwabuchi merely discusses, at column 10, lines 30-39, a "coolant La may be positively and sufficiently supplied to the grinding point P1 at the pressure and the flow rate at which a cooling of the vicinity of the grinding point P1 and a discharge of the grinding chips may be sufficiently performed." As the Examiner concedes, Iwabuchi says nothing about a nozzle that sprays a "coolant material at substantially the same predetermined velocity," as required by amended claims 1, 10, and 19. Indeed, Iwabuchi clearly fails to appreciate the advantages of minimizing coolant wastage. Absent an appreciation of these advantages, there is no suggestion of providing coolant material at the same velocity as the velocity of the grinding surface, as now required by amended claims 1, 10, and 19.

Because Iwabuchi neither teaches nor suggests providing coolant material at the same velocity as the grinding surface, it must be concluded that Iwabuchi cannot render claims 1, 10, and 19 as obvious. Accordingly, reconsideration of the rejections under 35 U.S.C. § 103(a) and allowance of claims 1, 10, and 19 are respectfully requested.

Since claims 3-9, 12-18, and 21 depend from claims 1, 10, or 19, directly or

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indirectly, the reasons for allowance of claims 1, 10, and 19 apply as well to the dependent claims.

Conclusions

In view of the preceding amendments and remarks, it is respectfully requested that all of the pending claims (claims 1, 3-10, 12-19, and 21) are in condition for allowance. Such action is respectfully requested.

Respectfully submitted,

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Date



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